



IN ASSEMBLY,

February 25, 1868.

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REPORT  
OF THE HARLEM BRIDGE COMMISSIONERS.

*To the Hon. the Legislature of the State of New York :*

The Commissioners to complete the building of the bridge over Harlem river at the termination of the Third avenue, in the city of New York, submit the following report of their proceedings during the past year, and of the present condition of the work :

Since their last report, the north abutment, one hundred feet in width, with wings and steps, balustrade and coping, has been built.

The swing span, including balustrade, coping, arches, and railing, has been completed.

The fixed spans, except the bays over the exterior columns or the north and south piers, have been finished.

The roadway and sidewalks have been laid.

Temporary lamp-posts and lanterns have been erected, gas pipes laid and gas supplied.

A water engine, operating the swing span, has been constructed and affixed to the bridge, and pipes connecting it with Croton main have been laid; and so noiseless, rapid, and perfect are its operations, that the swing span is opened and shut apparently by magic.

The old bridge, except two submerged piers, has been removed.

The approaches were so far completed, and the whole work so far advanced, that on the 16th of October last the bridge was opened for public travel, and since that time thousands have crossed it daily.

The brackets under the sidewalks are yet to be made and put in position.

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Granite and blue-stone flagging and curbing, and Belgian or Nicholson pavement for the approaches are to be procured and laid.

Permanent gothic lamp-posts are to be erected.

The submerged piers of the old bridge have not been removed.

The east retaining wall of the north approach, and those of the south approach, have not been erected.

The bays over the exterior columns of the north and south piers are still wanting.

Other portions of the bridge may need slight touches, but otherwise no further labor or material will be required to complete this magnificent structure.

The following material has been placed in position since the date of their last report :

Cast iron (pounds).....	473,373
Wrought iron (pounds).....	48,982
Masonry in the abutments and retaining and guard walls (yards).....	1,689 $\frac{5}{12}$
Lumber in roadway and sidewalks (feet).....	132,000

A portion of the last appropriation for the completion of the bridge has been expended in constructing the south approach and removing the old bridge.

The amount of appropriation unexpended is.....	\$33,808 04
The estimate of the chief engineer for the completion of the bridge is.....	54,500 00
For the completion of the south approach is.....	20,100 00
For the completion of the north approach is.....	51,900 00
For removal of the submerged piers.....	3,000 00

It therefore appears from the report of the chief engineer, hereto annexed, that it will require, after expending the amount on hand for that purpose, an appropriation of forty-three thousand seven hundred and ninety-one dollars and ninety-six cents (\$43,791.96), to complete the bridge and south approach, and to remove the submerged piers of the old bridge.

All of which is respectfully submitted.

(Signed),  
GEO. R. JACKSON, *Pres't*,  
GEO. W. QUINTARD,  
WM. H. ROBERTSON,  
ALSOP H. LOCKWOOD, } *Comm'rs.*

NEW YORK, *January 1, 1868.*

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## ENGINEER'S REPORT.

*To the Commissioners of the Harlem Bridge :*

Gentlemen—The excavation for the stone foundation of the east retaining wall for the north approach has been completed, and a part of the stone have been put in. In consequence of the great weight of the earth and gravel filling of the approach, large quantities of the underlying mud was forced out, and had to be excavated.

The east edge of the filling of the approach settled, and occupied the place of the displaced mud. The extra dredging and filling, made necessary by the crushing out of the mud, has materially increased the cost of that part of the work, and it will exceed the estimate I originally made. The stone filling for the foundation is now being put in, and when the filling has reached to a point one foot below extreme low water, the first course of heavy blocks of blue stone will be commenced.

Mechanics are completing the joints and fastenings of the architectural filling-in castings. The mould for one of the pier bays is finished, and the second being commenced. The plans for the gothic lamp-posts are in the hands of the carver.

The brackets, in lieu of the arches under ends of sidewalks, have not been commenced, as there is not funds enough in the treasury to pay their cost, after providing for the other necessary details which are yet unfinished.

I recommend the construction of a gallery and bridge-tender's lodge on the tops of the swing-span—the gallery to extend from one side to the other. The hand-gear for operating the engines for opening and shutting the swing-span can be extended from the roadway up into the lodge, without in the least interfering with the carriage travel. On two sides of the lodge, facing the roadway, I recommend the application of large reflecting lanterns, similar to those in use as head-lights on locomotives. The beams supporting the gallery extend from side to side, connecting the two main arches, and tying them together from the under side of the beam to the bottom of the box girder. The structure would receive additional stiffness by the introduction of four brackets, in

keeping with the rest of the work. The bridge-tender's lodge would be eight square, made of corrugated iron, in a light iron frame, and lined with wood.

The whole appendage would add to the appearance of the structure, besides giving the bridge-tender comfortable quarters, and the means of conveniently operating the swing-span and looking over either side, and having a full and unobstructed view of the passing vessel, and the opening she requires, and also knowing by observation the earliest moment when he can commence shutting the swing-span.

Temporary lamp-posts have been put up and the gas supplied. The public are now enjoying an unobstructed use of the bridge, and they are, apparently, both satisfied and pleased. I estimate the cost of completing the bridge, in all particulars, to be fifty-four thousand five hundred dollars (\$54,500). I estimate the cost of completing the retaining walls, the earth and gravel filling, flagging, curbing, and paving of the north or Westchester approach to the bridge to be fifty-one thousand nine hundred dollars (\$51,900).

I estimate the cost of constructing the retaining and guard walls for the south or New York approach, together with the earth and gravel filling, the curbing, flagging, and paving complete, to be twenty thousand one hundred dollars (\$20,100). It will be remembered that, in my former estimate of the amount required to complete the bridge, I stated that I had not included any part of the cost of the approaches to the bridge, or the clearing away of the old bridge. Some of the money appropriated to finish the bridge has been used for these purposes.

The submerged foundation of the old bridge yet remains in the river to the obstruction of navigation, and should be removed. It would, I think, cost to make the removal about three thousand dollars (\$3,000).

I have placed buoys over the sunken piers to warn vessels from that part of the channel.

ERASTUS W. SMITH, *Chief Engineer.*

NEW YORK, *December 6, 1867.*